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# Traditional Masculine Gender Role Norms and Nonsuicidal Self-Injury in Veterans

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#### Abstract

Reducing Veteran rates of suicide has long remained a top priority for the Veterans Health Administration, and as such, identifying correlates of suicidal behaviors is important to develop targeted interventions. Nonsuicidal self-injury (NSSI) has been identified as a robust predictor of suicide attempts; however, less is known about correlates of NSSI that may aid in upstream prevention efforts. Prior research suggests adherence to various traditional masculine gender role norms may be positively associated with NSSI. Thus, as the U.S. military is widely recognized for promoting and rewarding such norms, this study sought to build off previous research by examining the association between adherence to various masculine gender role norms and engagement in NSSI behaviors among a mixed-sex sample of U.S. Veterans (N=124). Results showed the norm of emotional control was most strongly associated with lifetime engagement in NSSI behaviors (including the behavior of wall-object punching), whereas the norm of violence was associated with NSSI disorder. Interestingly, exploratory analyses indicated that these associations were primarily driven by women Veterans and sexual orientation status. Overall, the results highlight the importance of assessing for adherence to masculine gender role norms among all Veterans and speak to additional avenues for future research.

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### Keywords

Non-suicidal self-injury; masculinity; gender role norms; Veterans; suicide

Suicide rates among Veterans have increased since the turn of the 21st century (McCarten et al., 2015), resulting in largescale suicide prevention efforts by the Veterans Health Administration (VHA) system over the last two decades. The identification of suicide risk factors and subsequent early intervention are key components of reducing suicide attempts among both Veterans and the general public. One suicide risk factor that is receiving more attention is nonsuicidal self-injury (NSSI), or the purposeful infliction of damage to one's own bodily tissue without the intent to die (American Psychiatric Association [APA], 2013). Despite the absence of suicidal intent, a history of engagement in NSSI has not only been strongly linked to suicidal ideation (Kimbrel et al., 2014; Kimbrel et al., 2015) and suicide attempts (Hamza et al., 2012; Klonsky et al., 2013), but also can lead individuals to underestimate the lethality of their suicidal behaviors (Stanley et al., 2001), thereby increasing their risk for dying by suicide. Possibly facilitating the increase in attention to NSSI is its inclusion as a condition for further study in the fifth edition of the *Diagnostic* and Statistical Manual of Mental Disorders (DSM-5). NSSI disorder is characterized by engagement in NSSI behavior on five or more days in the past 12 months with the goal of regulating emotions or resolving interpersonal conflicts, preceded by a preoccupation with NSSI or presence of a negative affective state prior to the behavior and resulting in significant distress and/or impairment (APA, 2013). With up to 14% of Veterans having engaged in NSSI in their lifetime (Bryan & Bryan, 2014; Kimbrel et al., 2015), identifying risk factors for these problematic behaviors may help reduce the frequency of NSSI, and, ultimately, suicide attempts.

Recently, adherence to traditional masculine gender role norms has been explored as a potential correlate of both suicide attempts and NSSI behaviors. Traditional masculine gender role norms are socially constructed standards of masculinity that include independence and self-reliance, power, disdain for homosexuality and feminine traits, aggression and violence, strength, and emotional control (Levant & Richmond, 2016). Adherence to these norms has been linked with decreased help-seeking (Whitlock et al., 2008) and impairments in the expression of vulnerability and emotional distress (Levant & Pollack, 1995). Individuals who strongly and inflexibly adhere to traditional masculine gender role norms may use self-harming behaviors to express and communicate their psychological distress (Green & Jakupcak, 2016). Whereas some research suggests rigid adherence to traditional masculine gender role norms increases suicide risk by reducing reliance on available supports designed to mitigate this risk (Braswell & Kushner, 2010; Burns & Mahalik, 2011), other studies propose that masculine gender norms encourage individuals to engage in painful experiences that increase their capability for suicide (Granato et al., 2015). The latter perspective reflects the interpersonal theory of suicide (Joiner, 2005), which posits that for an individual to die by suicide, they must have the desire to die and also the capability to tolerate both physical pain and fear (Van Orden et al., 2010). This capability can be acquired through engagement in NSSI behaviors that inherently promote habituation to fear and pain. Whether suicide risk is increased by way of

less reliance on available supports or by increased capacity to tolerate fear and physical pain, traditional masculine gender role norms are a clear risk factor for self-harm and eventual suicide attempts.

Green and Jakupcak (2016) argue that men's engagement in NSSI is often underreported and unrecognized for a number of reasons, including a tendency to qualify many NSSI behaviors as masculine-typical. Behaviors such as wall or object punching, smashing beer cans on one's head, or performing stunts may not be conceptualized as acts of NSSI due to their apparent congruence with what are perceived to be "normative" ways in which men express anger (Green & Jakupcak, 2016). As such, widespread acceptance of traditional masculine gender role norms may actually impede efforts to identify and address NSSI as part of early suicide prevention efforts. Consistent with this perspective, Green and colleagues (2018) found that adherence to traditional masculine gender role norms among male university students was positively associated with engagement in more masculine-typical NSSI behaviors (e.g., wall/object punching, burning oneself with a lighter), but negatively associated with engagement in NSSI behaviors inconsistent with these gender norms (e.g., scratching). These results postulate that adherence to masculine norms may influence methods by which individuals self-harm (Green & Jakupcak, 2016).

Although traditional masculine norms are evident within the civilian population, these gender role norms are perhaps even more salient within the United States military. The military involves a widely recognized secondary gender socialization process where masculinity is promoted and celebrated (Arkin & Dobrofsky, 1978; Fox & Pease, 2012). Traits such as emotional control, stoicism, self-reliance, and aggression are masculinetypical values emphasized during military socialization (Hockey, 2003). The promotion of these traits may impact how military personnel cope with emotional distress, and thus, their risk for NSSI. In fact, Bandel and Anestis (2020) examined correlates of NSSI among 706 male military personnel and found a positive association between past engagement in NSSI and adherence to masculine norms of self-reliance ( $p\eta^2 = 0.055$ ), violence ( $p\eta^2 = 0.046$ ), and emotional control ( $p\eta^2 = 0.028$ ). Due to a lack of statistical power, Bandel and Anestis were unable to examine correlates of NSSI for women. This constitutes a significant gap in the literature, as prior research suggests many women in traditionally male-dominated environments, such as in engineering (Powell et al., 2009), or the military (Sasson-Levy, 2003), internalize the hegemonic masculine ideology of the organizational culture and often display masculine behaviors as a way to separate themselves from traditional femininity. Thus, women in such environments may be more likely to conform to traditional masculine gender role norms, which may thereby elevate their risk for NSSI compared to their women counterparts in non-androcentric environments.

As Bandel and Anestis' (2020) study was the first of its kind, a primary objective of the present research was to replicate the findings of their study in a mixed-sex Veteran population. In addition to examining the association between adherence to various traditional masculine gender role norms and engagement in NSSI, this study also endeavored to explore the degree to which adherence to masculine gender norms may be associated with a lifetime diagnosis of NSSI disorder in Veterans. Further, given the particularly strong association between adherence to traditional masculine gender role norms and wall-object

punching demonstrated in previous studies, this study aimed to explore which, if any, specific traditional masculine gender role norms were associated with this form of NSSI among Veterans. It was hypothesized that the masculine gender role norms of emotional stoicism, violence, and self-reliance would be positively associated with these outcome variables for both men and women.

## Method

#### **Participants**

Study participants consisted of 124 U.S. Veterans who consented to be a part of a larger study investigating the functional outcomes of NSSI disorder in Veterans with at least one psychiatric disorder. Participants were primarily recruited through recruitment letters and follow-up phone calls. To qualify for the study, participants had to be over the age of 18, have served in the U.S. military, be willing to complete the study procedures, and have at least one psychiatric disorder. Participants with bipolar disorder, schizophrenia, and/or schizoaffective disorder were ineligible for the study. Both Veterans with NSSI disorder and women Veterans were initially oversampled to allow for adequate representation. Approximately half of the sample (n = 59; 47.6%) met criteria for lifetime NSSI disorder and a quarter of the sample was comprised of female veterans (n = 32; 25.8%). Notably, all participants in the sample identified as cisgender. The sample consisted of 64 (51.6%) Veterans who identified as Black, 52 (41.9%) who identified as White, five (4.0%) who identified as Other or declined to answer, two (1.6%) who identified as more than one race, and one (0.8%) Veteran who identified as Asian. Additionally, two (1.6%) Veterans identified ethnically as Hispanic, and 20 (16.1%) identified as sexual minority individuals. The average age was 48.7 years (SD = 13.0; range: 23-77). The majority of sampled Veterans identified their service era as OIF (35.5%, n = 44), followed by OEF (22.6%, n = 44) 28), Gulf War (19.4%, n = 24), Post-Vietnam (16.1%, n = 20), Vietnam (12.1%, n = 15), OND (3.2%, n = 4), and Korea (0.8%, n = 1). Approximately 22 Veterans (17.7%) identified their service era as "Other."

#### **Measures**

The Clinician-Administered Nonsuicidal Self-Injury Disorder Index (CANDI; Gratz et al., 2015) was administered to assess for the presence of lifetime NSSI disorder. As a semi-structured clinical interview, the CANDI has good interrater reliability ( $\kappa$  = .83) and internal consistency ( $\alpha$  = .71; Gratz et al., 2015). With the recent addition of NSSI disorder as a condition for further study in the DSM-5 (APA, 2013), each CANDI interview was separately reviewed and discussed in diagnostic review groups led by a licensed clinical psychologist until diagnostic consensus was reached.

The *Deliberate Self-Harm Inventory* (DSHI: Gratz, 2001) was used to identify the particular NSSI behavior(s) of each participant. The DSHI is a self-report questionnaire that queries 16 specific self-injurious behaviors and includes a 17<sup>th</sup> item that asks about other forms of NSSI. Respondents are asked if they have participated in the given behavior, and, if so, how many times in the past year. NSSI severity has typically been operationalized as the dichotomized presence of at least one behavior/episode requiring medical attention

(Dixon-Gordon et al., 2014; Gratz & Tull, 2012; Turner et al., 2013). The DSHI has been shown to have good internal consistency and test-retest reliability (Gratz, 2001). For the purposes of this study, the DSHI was altered to include an additional item designed to assess wall-object punching (Green et al., 2018), resulting in 18 different categories of lifetime NSSI behavior that were assessed. The sum of the 18 different categories of lifetime NSSI behaviors was used to calculate a total score. The internal consistency of the 18-item DSHI was adequate in the present sample ( $\alpha = .71$ ).

The *Conformity to Masculine Norms Inventory–22-Item Version* (CMNI-22) was administered to assess the degree of a participant's endorsement of masculine norms. The CMNI-22 is a modified version of the 94-item CMNI (Mahalik et al., 2003), and utilizes the two highest loading items of each of the 11 masculinity domains: Winning, Emotional Control, Risk Taking, Violence, Dominance, Playboy, Self-Reliance, Primacy of Work, Power over Women, Disdain for Homosexuals, and Pursuit of Status. The degree of endorsement is measured on a 4-point Likert-scale with response choices ranging from strongly agree to strongly disagree, with higher scores indicative of greater conformity to masculine norms. The CMNI-22 has high correlation with the 94-item scale (r = 0.92; Hamilton & Mahalik, 2009). Further, the CMNI has high overall internal consistency ( $\alpha$  = .94), while the subscales range from .75 to .91 (Mahalik et al., 2003). Among men, the CMNI has high test-retest reliability (r = .95; Mahalik et al., 2003).

## **Data Analysis Plan**

Because the DSHI total score (i.e., the sum of the 18 different categories of lifetime NSSI behaviors assessed as present/absent) was non-normal (skewness = 1.552; kurtosis = 1.542) linear regression with maximum likelihood estimation and robust standard errors (MLR) was used to analyze the association between the 11 CMNI subscales and the DSHI total score, whereas logistic regression with mean- and variance-adjusted weighted least squares (WLSMV) estimation was used to analyze the association between the 11 CMNI subscales and lifetime NSSI disorder and wall-object punching (both of which were categorical variables defined as 0=absent, present=1). In each of the three base models, we initially included all 11 CMNI subscales as well as a number of key covariates, including sex (female assigned at birth = 0, male assigned at birth = 1), age, White race (absent = 0, present = 1), Black race (absent = 0, present = 1), ethnicity (non-Hispanic = 0, Hispanic = 1), sexual minority status (sexual majority = 0, sexual minority = 1), and number of lifetime psychiatric disorders present at the time of the assessment (range = 1-10). Trimmed models were then re-run with only the variables that had p-values below 0.05 in the initial models in order to identify the most parsimonious models for each of the three outcome variables. Regression analyses were conducted with the Mplus 6.0 software package (Muthén & Muthén, 2011).

### Results

Regression model 1 included all CMNI subscales and covariates as predictors of DSHI total score. As can be seen in Table 1, only the Emotional Control subscale of the CMNI,  $\beta = 0.22$ , p = 0.007, CI: 0.06 - 0.38, and number of lifetime psychiatric disorders,

 $\beta$  = 0.31, p = 0.001, CI: 0.13 – 0.49, were significantly associated with DSHI total scores. Regression model 2, which included only these two predictors, confirmed that each remained significantly associated with DSHI total score (p< 0.05) when all other non-significant variables were removed from the model.

Regression model 3 included all CMNI subscales and covariates as predictors of lifetime NSSI disorder. As can be seen in Table 1, only the Violence subscale of the CMNI,  $\beta = 0.28$ , p = 0.03, CI: 0.04 - 0.57, and number of lifetime psychiatric disorders,  $\beta = 0.51$ , p < 0.001, CI: 0.24 - 0.75, were significantly associated with lifetime NSSI disorder. Regression model 4, which included only these two predictors, confirmed that each remained significantly associated with lifetime NSSI disorder (p < 0.05) when all other non-significant variables were removed from the model.

Finally, regression model 5 included all CMNI subscales and covariates as predictors of lifetime wall-object punching. As can be seen in Table 1, only the Emotional Control subscale of the CMNI,  $\beta = 0.25$ , p = 0.02, CI: 0.04 - 0.47, number of lifetime psychiatric disorders,  $\beta = 0.36$ , p = 0.003, CI: 0.17 - 0.56, and age,  $\beta = -0.24$ , p = 0.04, CI: -0.46 - -0.03, were significantly associated with lifetime wall-object punching. Regression model 6, which included only these three predictors, revealed that Emotional Control and number of lifetime disorders remained significantly associated with lifetime wall-object punching (p < 0.05) when all other non-significant variables were removed from the model; however, age (p = 0.10) was no longer significant in this more parsimonious model. Accordingly, a final trimmed model (Model 7) was conducted in which only Emotional Control and number of lifetime disorders were included as predictors of lifetime wall-object punching. In this final trimmed model, both variables remained significantly associated with wall-object punching (p < 0.05) after all other non-significant variables were removed from the model.

## **Post-Hoc Correlation Analyses**

Although sex and sexual minority status were not associated with the selected outcome variables, we were interested in exploring how sex and sexual minority status might impact the correlational relationship between the subscales of the CMNI and DSHI total score, NSSI disorder, and wall-object punching, respectively. As can be seen in Table 2, the direction and magnitude of correlations varied greatly by group. For example, our previous finding that Emotional Control was associated with DSHI total score and wall-object punching (Table 1) appears to be largely driven by strong positive associations among women Veterans. Notably, CMNI total score was significantly correlated with lifetime NSSI disorder diagnosis among both sexual minority women Veterans (r = 0.69, p < 0.05) and sexual majority women Veterans (r = 0.51, p < 0.05). In addition, Pursuit of Status was also positively correlated with DSHI total score (r = 0.49, p < 0.05) and lifetime NSSI disorder (r = 0.49, p < 0.05) among sexual majority women Veterans. In contrast, we observed a strong negative correlation between the Power over Women subscale and DSHI total score (r = -0.94, p < 0.05), lifetime NSSI disorder (r = -0.86, p < 0.05), and wall-object punching (r = -0.86, p < 0.05) among sexual minority men Veterans.

## **Discussion**

This study of U.S. military Veterans found notable nuances in the relation between adherence to masculine gender norms and NSSI. Consistent with prior research (e.g., Patel et al., 2021), lifetime history of psychiatric disorders was strongly associated with all three lifetime outcomes assessed: NSSI behaviors, NSSI disorder, and wall-object punching. The relation between psychiatric disorders and engagement in self-harm behaviors is well-established and suggests this risk factor continues to warrant attention. The findings of this study were also consistent with those of Bandel and Anestis (2020) such that Veterans endorsing adherence to the Emotional Control norm also reported greater engagement in lifetime NSSI behaviors, as well as the specific behavior of wall-object punching. Veterans who endorsed greater adherence to the masculine norm of Violence were more likely to have met criteria for NSSI disorder at some point in their lifetime.

Notably, the present study builds on prior work examining the association between NSSI and masculine norms by demonstrating this association with the behavior of wallobject punching among Veterans. Although a prior study was able to demonstrate these associations in a college sample (Green et al., 2018), the present findings confirm that the masculine norm of Emotional Control is associated with greater engagement in wall-object punching. Wall-object punching is a largely understudied, yet prevalent, form of NSSI among Veterans that has been found to be uniquely associated with suicide in this population (Kimbrel et al., 2018). Future research should seek to explore whether the masculine norm of Emotional Control may be a risk factor or targetable mechanism that could help mitigate risk for life-interfering behaviors. Additionally, wall-object punching has been linked to both anger and impulsivity, such that the association between impulsivity and wall-object punching are indirectly related via anger (Patel et al., 2022). The Emotional Control masculine norm has similarly shown strong associations with impulsivity (Litherland et al., 2021) and anger (Salgado et al., 2019). As such, future research should seek to further examine the role of the Emotional Control norm in these pathways to determine if adherence to this masculine gender role norm may play a casual role in the engagement of wall-object punching in Veterans.

Interestingly, the results of this study were not driven by men, but rather by women. When the results were further analyzed according to the intersection of both sex and sexual minority or majority status, the association between adherence to Emotional Control and past engagement in NSSI behaviors, and between adherence to the norm of Violence and lifetime NSSI disorder, were only significant for sexual minority females. Similarly, the relation between adherence to Emotional Control and lifetime engagement in the specific NSSI behavior of wall-object punching was only significant for sexual majority females. There was no association between the Emotional Control or Violence norms and any of the study outcomes for either sexual majority or minority males. Thus, in contrast to Bandel and Anestis (2020), whose study only examined masculine norms and NSSI in men, this study found that adherence to the masculine norms of Emotional Control and Violence only served as a risk factor for engagement in NSSI behaviors among women, not men. This finding is perhaps even more surprising considering women only made up 25% of the Veteran sample in this study. These results suggest that the influence of assimilation into a martial

environment, and by extension possibly any man-dominated environment, is substantial and may contribute to gender role stress that leaves women increasingly vulnerable to the deleterious effects of adherence to masculine gender role norms.

Differences in sample may be one possible explanation for why this study's findings diverge from those of similar studies. Bandel and Anestis (2020) drew a sample of 706 men with an average age of 26.82 who were primarily affiliated with the Army National Guard, whereas this study sampled 92 male Veterans with an average age of 48.7 who were not actively serving in the U.S. military. It is possible that with a larger sample size, this study may have found a positive association between masculine gender role norms and NSSI in men. However, it is also likely the case that the findings for women may have proven even more robust. Beyond sample size, the difference in this study's findings may also be attributable to the type of sample utilized. National Guard members are actively participating in a hypermasculine military culture and are typically younger in age than Veterans, who are older and further removed from this culture. Future research may benefit from exploring the differences in adherence to masculine gender role norms and NSSI in active duty compared to Veteran populations, as it may be the case that the most effective NSSI and suicide prevention interventions are dependent on these variables.

When examining these results through the lens of intersectionality, there may be a number of possible explanations for this study's unique findings. As previously discussed, expressions and behaviors consistent with traditional masculine gender role norms are widely celebrated and promoted within military culture (Arkin & Dobrofsky, 1978; Fox & Pease, 2012), and in the process alternative genders and sexualities are largely marginalized (Van Gilder, 2019). Thus, for heterosexual male Veterans, adherence to traditional masculine gender role norms in such a context may confer significantly more rewards than risks, as behavior consistent with these norms is likely to be met with perhaps even more approval and reinforcement than men may find in the civilian world (Robinson Kurpius & Lucart, 2000). For sexual minority men, their sexual orientation, itself, is a violation of traditional masculine gender role norms that are largely heteronormative in nature (Levant & Richmond, 2016) and can result in increased stigmatization, gender role conflict, and minority stress commonly associated with engagement in NSSI (Liu et al., 2019). However, adhering to traditional masculine gender role norms within a military context may actually be protective for sexual minority men, possibly by way of providing additional social support that can mitigate psychological distress or by encouraging sexual minority men to outperform their heterosexual counterparts (Price & Parker, 2003), thereby increasing overall respect from others and potentially reducing their degree of minority stress. In this way, sexual minority men can "compensate" for their inherent violation of heteronormative masculine norms in the military by strongly adhering to other masculine norms (e.g., strength, athleticism) deemed essential to combat situations (Eguchi, 2009).

Whereas sexual minority men may be able to compensate for violations of traditional gender role norms, this may not be possible for both heterosexual and sexual minority women. Femininity has often been condemned within the military context, with the assumption that feminine qualities may threaten the effectiveness of military practices (Van Gilder, 2019). Despite the tendencies for many women in the military to emulate masculine mannerisms

to earn respect and achieve status (Cheung et al., 2016), along with forced adherence to uniform and grooming standards that serve to downplay feminine characteristics, gender is a more visible identity than sexual orientation and thus, likely more difficult to compensate for in a military context. Women's inherent violation of masculine military culture may lead to a dearth of social support and increased risk of ostracism, which has been demonstrated in traditionally male occupational settings (Rubin et al., 2019) and is linked to negative mental health outcomes (e.g., Smith et al., 2013). Unfortunately, women may continue to feel marginalized even after the conclusion of their military service, in that they no longer meet traditional "feminine" standards found in civilian society and can also understandably be reluctant to shed their adherence to masculine behaviors and norms developed during their service (Hirudayaraj & Clay, 2019).

Although minority gender status in the military can have negative implications for women in general, the intersection of minority gender and sexual orientation status may leave sexual minority women particularly vulnerable to the negative effects of ostracism within the military. Sexual minority Veterans are more likely to develop substance abuse problems, PTSD, and depression than their sexual majority counterparts (Cochran et al., 2013), and these outcomes are connected to emotional stoicism (Neilson et al., 2020). Thus, sexual minority women's adherence to the masculine norms of Emotional Control, and even Violence, may further exacerbate their already greater risk for negative mental health sequelae and associated maladaptive coping mechanisms like NSSI.

As the findings of this study suggest, adherence to traditional masculine gender role norms among women may naturally increase NSSI and suicide risk by reducing reliance on or availability of supports. It is less clear how these results fit within the framework of Joiner's (2005) theory regarding the connection between masculine gender role norm adherence and engagement in painful experiences that ultimately increase capability for suicide. According to this theory, it might be expected that women's increased adherence to certain masculine gender role norms would ultimately render them at greater risk for not only NSSI, but also for selection of lethal means and higher suicide completion rates. However, there is abundant research that confirms men are more likely to use lethal means during a suicide attempt (e.g., Kposowa & McElvain, 2006) and are similarly four times more likely to complete suicide than women, despite women being three times more likely than men to attempt suicide (Maris et al., 2000). One possible explanation for these seemingly paradoxical statistics may involve access to means. Research shows that only 24.4% of women Veterans own firearms, compared to 47.2% of male Veterans (Cleveland et al., 2017). Furthermore, women Veterans are more likely to die by suicide and use a firearm in their attempt than non-Veteran women (Kaplan et al., 2009), of whom only about 11% own firearms (Cleveland et al., 2017). Thus, gender differences in suicide methodology and completion may be partially explained by access to firearms as a means for suicide, rather than exclusively by adherence to specific gender role norms. Another possible explanation for these statistics might lie in women's adherence to both masculine and feminine gender role norms, as gender role adherence is not mutually exclusive. Women Veteran's adherence to feminine gender role norms was not measured during this study, but it is possible that the women in this study are more likely than men to conform to the feminine gender role norm of beauty. Some studies have hypothesized that women may be less likely than men to attempt suicide with highly lethal

means like firearms for fear of facial or bodily disfigurement (Tsirigotis et al., 2011). Future research would benefit from exploring the intersections between these possible risk factors for self-harm and suicidal behavior. The results of this study similarly raise several other considerations for future research that are worth noting. There is ample data to suggest that strong adherence to traditional masculine gender role norms can encourage avoidance or restriction of difficult emotions among men, which may ultimately result in emotion dysregulation characterized by aggression or other potentially violent behaviors (please see Berke et al., 2018, for a detailed review). The results of this study speak to the importance of examining self-directed aggression and violence, such as NSSI, within this research area. Further, these data indicate that the relation between adherence to masculine gender role norms and subsequent emotional restriction does not exclusively lie with men. Future research examining the relation between masculine gender role norm adherence, emotional suppression, and engagement in aggressive behaviors would benefit from including women in samples studied.

In addition to research considerations, the results of this study also propose important clinical considerations in the treatment and prevention of NSSI behaviors, as well as suicide prevention. Targeting adherence to masculine gender role norms on a broader scale may not be sufficient in reducing risk for NSSI. Similarly, interventions aimed solely at male Veterans may miss an important opportunity to identify ways that women's adherence to certain masculine norms can increase risk for not only NSSI in general, but also types of NSSI that have almost exclusively been attributable to men in the past (e.g., wall or object punching). Assessment of traditionally gendered forms of NSSI is necessary amongst all Veterans so as not to overlook an important form of self-harm that may be occurring even among women Veterans. Early intervention opportunities exist within the military, where despite the promotion of masculine norms, all military personnel can be provided training on adaptive distress tolerance skills. Later interventions may involve evidence-based psychotherapies that target adherence to masculine norms and corresponding behaviors, such as Cognitive Behavioral Therapy, Acceptance and Commitment Therapy, and Cognitive Processing Therapy. Interventions designed specifically to address suicidal behaviors, such as Collaborative Assessment and Management of Suicidality and Dialectical Behavior Therapy, can similarly target masculine norms.

Although the results of this study highlight considerations for the treatment of NSSI behaviors in Veterans, it is important to acknowledge the cross-sectional research design and limitations inherent in having a small sample size with underpowered cells. Furthermore, participants in this study only reported cisgender identities, which limits the ability to explore ways adherence to masculine norms may differentially be associated with NSSI among nonbinary or transgender individuals. Relatedly, this study only used one measure of sexual orientation status, thus, these findings are only generalizable to sexual minority Veterans with sexual minority identities. Future research would benefit from replicating this study with a larger sample size. Additionally, using the full CMNI scale may ultimately provide a more thorough measurement of adherence to masculine gender role norms, as the subscales of the CMNI-22 measure used in this study each consisted of only 2 items.

It is likely the case that the dominant social culture of the military will continue to support heteronormativity and hegemonic masculinity, as it has for centuries. However, increased awareness of the negative mental health sequelae that can stem from exposure to this culture gives clinical providers the opportunity to mitigate these effects through intentional and targeted therapeutic interventions. With persistence, such interventions can work to reduce the risk for NSSI amongst all Veterans, and thereby, Veterans' overall risk for suicidal behaviors.

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#### References

- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). 10.1176/appi.books.9780890425596
- Arkin W, & Dobrofsky LR (1978). Military socialization and masculinity. Journal of Social Issues, 34(1), 151–168. 10.1111/j.1540-4560.1978.tb02546.x
- Bandel SL, & Anestis MD (2020). Non-suicidal self-injury among male service members: Descriptive information and a preliminary examination of external correlates. Psychiatry Research, 285, 112815. 10.1016/j.psychres.2020.112815 [PubMed: 32036153]
- Berke DS, Reidy D, & Zeichner A (2018). Masculinity, emotion regulation, and psychopathology: A critical review and integrated model. Clinical Psychology Review, 66, 106–116. 10.1016/j.cpr/2018/01/004 [PubMed: 29398184]
- Braswell H, & Kushner HI (2012). Suicide, social integration, and masculinity in the US military. Social Science & Medicine, 74(4), 530–536. 10.1016/j.socscimed.2010.07.031 [PubMed: 21036443]
- Burns SM, & Mahalik JR (2011). Suicide and dominant masculinity norms among current and former United States military servicemen. Professional Psychology: Research and Practice, 42(5), 347–353. 10 1037/a0025163
- Bryan C, & Bryan A (2014). Nonsuicidal self-injury among a sample of United States military personnel and veterans enrolled in college classes. Journal of Clinical Psychology, 70(9), 874–885. 10.1002/jclp.22075 [PubMed: 24619940]
- Cheung HK, Lindsey A, King E & Hebl MR (2016), Beyond sex: Exploring the effects of femininity and masculinity on women's use of influence tactics. Gender in Management, 31(1), 43–60. 10.1108/GM-12-2014-0107
- Cleveland EC, Azrael D, Simonetti JA, & Miller M (2017). Firearm ownership among American veterans: Findings from the 2015 National Firearm Survey. Injury Epidemiology, 4(1), 1–10. 10.1186/s40621-017-0130-y [PubMed: 28066870]
- Cochran BN, Balsam K, Flentje A, Malte CA, & Simpson T (2013). Mental health characteristics of sexual minority veterans. Journal of Homosexuality, 60(2–3), 419–435. 10.1080/00918369.2013.744932 [PubMed: 23414280]

Dixon-Gordon KL, Tull MT, & Gratz KL (2014). Self-injurious behaviors in posttraumatic stress disorder: An examination of potential moderators. Journal of Affective Disorders, 166, 359–367. 10.1016/j.jad.2014.05.033 [PubMed: 24981133]

- Eguchi S (2009). Negotiating hegemonic masculinity: The rhetorical strategy of "straight-acting" among gay men. Journal of Intercultural Communication Research, 38(3), 193–209. 10.1080/17475759.2009.508892
- Fox J, & Pease B (2012). Military deployment, masculinity and trauma: Reviewing the connections. The Journal of Men's Studies, 20(1), 16–31. 10.3149/jms.2001.16
- Granato SL, Smith PN, & Selwyn CN (2015). Acquired capability and masculine gender role norm adherence: Potential pathways to higher rates of male suicide. Psychology of Men & Masculinity, 16(3), 246–253. 10.1037/a0038181
- Gratz KL (2001). Measurement of deliberate self-harm: Preliminary data on the deliberate self-harm inventory. Journal of Psychopathology and Behavioral Assessment, 23(4), 253–263. 10.1023/A:1012779403943
- Gratz KL, Dixon-Gordon KL, Chapman AL, & Tull MT (2015). Diagnosis and characterization of DSM-5 nonsuicidal self-injury disorder using the clinician-administered nonsuicidal self-injury disorder index. Assessment, 22(5), 527–539. 10.1177/1073191114565878 [PubMed: 25604630]
- Gratz KL & Tull MT (2012). Exploring the relationship between posttraumatic stress disorder and deliberate self-harm: The moderating roles of borderline and avoidant personality disorders. Psychiatry Research, 199(1), 19–23. 10.1016/j.psychres.2012.03.025 [PubMed: 22521897]
- Green JD, & Jakupcak M (2016). Masculinity and men's self-harm behaviors: Implications for non-suicidal self-injury disorder. Psychology of Men & Masculinity. 17(2), 147–155. 10.1037/a0039691
- Green JD, Kearns JC, Ledoux AM, Addis ME, & Marx BP (2018). The association between masculinity and nonsuicidal self-injury. American Journal of Men's Health, 12(1), 30–40. 10.1177/1557988315624508.
- Hamilton CJ, & Mahalik JR (2009). Minority stress, masculinity, and social norms predicting gay men's health risk behaviors. Journal of Counseling Psychology, 56(1), 132–141. 10.1037/ a0014440
- Hamza CA, Stewart SL, & Willoughby T (2012). Examining the link between nonsuicidal self-injury and suicidal behavior: A review of the literature and an integrated model. Clinical Psychology Review, 32(6), 482–495. 10.1016/j.cpr.2012.05.003 [PubMed: 22717336]
- Hirudayaraj M, & Clay C (2019). Experiences of women veterans within the private sector: Examining the intersection of gender and veteran status. Human Resource Development Quarterly, 30(4), 473–494. 10.1002/hrdq.21367
- Hockey J (2003). No more heroes: Masculinity in the infantry. In Higate P (Ed.), Military masculinities: Identity and the state (pp. 15–26). Westport: Praeger.
- Joiner TE (2005). Why People Die by Suicide. Cambridge, MA: Harvard University Press.
- Kaplan MS, McFarland BH, & Huguet N (2009). Firearm suicide among veterans in the general population: Findings from the national violent death reporting system. Journal of Trauma and Acute Care Surgery, 67(3), 503–507. 10.1097/TA.0b013e3181b36521
- Kimbrel NA, Gratz KL, Tull MT, Morissette SB, Meyer EC, DeBeer BB, Silvia PJ, Calhoun PC, & Beckham JC (2015). Non-suicidal self-injury as a predictor of active and passive suicidal ideation among Iraq/Afghanistan war veterans. Psychiatry Research, 227(2-3), 360–362. 10.1016/ j.psychres.2015.03.026 [PubMed: 25858799]
- Kimbrel NA, Johnson ME, Clancy C, Hertzberg M, Collie C, Van Voorhees EE, Dennis MF, Calhoun PS, & Beckham JC (2014). Deliberate self-harm and suicidal ideation among male Iraq/Afghanistan-era veterans seeking treatment for PTSD. Journal of Traumatic Stress, 27(4), 474–477. 10.1002/jts.21932 [PubMed: 25066891]
- Kimbrel NA, Thomas SP, Hicks TA, Hertzberg MA, Clancy CP, Elbogen EB, ... & Beckham JC (2018). Wall/object punching: An important but under-recognized form of nonsuicidal self-injury. Suicide and Life-Threatening Behavior, 48(5), 501–511. [PubMed: 28925016]

Klonsky ED, May AM, & Glenn CR (2013). The relationship between nonsuicidal self-injury and attempted suicide: Converging evidence from four samples. Journal of Abnormal Psychology, 122(1), 231–237. 10.1037/a0030278 [PubMed: 23067259]

- Kposowa AJ, & McElvain JP (2006). Gender, place, and method of suicide. Social Psychiatry and Psychiatric Epidemiology, 41(6), 435–443. 10.1007/s00127-006-0054-2 [PubMed: 16565913]
- Levant RF, & Pollack WS (Eds.). (1995). A new psychology of men. Basic Books/Hachette Book Group.
- Levant RF, & Richmond K (2016). The gender role strain paradigm and masculinity ideologies. In Wong YJ & Wester SR (Eds.), APA handbook of men and masculinities (pp. 23–49). American Psychological Association, 10.1037/14594-002
- Litherland S, Miller P, Droste N, & Graham K (2021). Male Barroom Aggression among Members of the Australian Construction Industry: Associations with Heavy Episodic Drinking, Trait Variables and Masculinity Factors. International Journal of Environmental Research and Public Health, 18(13), 6769. 10.3390/ijerphl8136769 [PubMed: 34202511]
- Liu RT, Sheehan AE, Walsh RF, Sanzari CM, Cheek SM, & Hernandez EM (2019). Prevalence and correlates of non-suicidal self-injury among lesbian, gay, bisexual, and transgender individuals: A systematic review and meta-analysis. Clinical Psychology Review, 74, 101783. 10.1016/j.cpr.2019.101783 [PubMed: 31734440]
- Maris RW, Berman AL, & Silverman MM (2000). Comprehensive textbook of suicidology. Guilford Press
- Mahalik JR, Locke BD, Ludlow LH, Diemer MA, Scott RP, Gottfried M, & Freitas G (2003). Development of the conformity to masculine norms inventory. Psychology of Men & Masculinity, 4(1), 3–25. 10.1037/15249220Al.32
- McCarten JM, Hoffmire CA, & Bossarte RM (2015). Changes in overall and firearm veteran suicide rates by gender, 2001–2010. American Journal of Preventive Medicine, 48(3), 360–364. 10.1016/j.amepre.2014.10.013 [PubMed: 25595605]
- Muthén LK, & Muthén B (2011). Multilevel modeling with latent variables using Mplus: Longitudinal analysis. http://www.statmodel.com/download/Topic%208.pdf
- Neilson EC, Singh RS, Harper KL, & Teng EJ (2020). Traditional masculinity ideology, posttraumatic stress disorder (PTSD) symptom severity, and treatment in service members and veterans: A systematic review. Psychology of Men & Masculinities, 21(4), 578–592. 10.1037/men0000257
- Patel TA, Dillon KH, Cassiello-Robbins C, Calhoun PS, Beckham JC, & Kimbrel NA (2022) Anger, impulsivity and wall/object punching in a sample of U.S. veterans with psychiatric disorders. Journal of Psychiatric Research, 147, 269–273. 10.1016/j.jpsychires.2022.01.036 [PubMed: 35074743]
- Patel TA, Mann A, Blakey SM, Aunon FM, Calhoun PS, Beckham JC, & Kimbrel NA (2021). Diagnostic correlates of nonsuicidal self-injury disorder among veterans with psychiatric disorders. Psychiatry Research, 296, 113672. 10.1016/j.psychres.2020.113672 [PubMed: 33383275]
- Powell A, Bagilhole B, & Dainty A (2009). How women engineers do and undo gender: Consequences for gender equality. Gender, Work & Organization, 16(4), 411–428. 10.1111/j.1468-0432.2008.00406.x
- Price M, & Parker A (2003). Sport, sexuality, and the gender order: Amateur rugby union, gay men, and social exclusion. Sociology of Sport Journal, 20(2), 108–126. 10.1123/ssj.20.2.108
- Robinson Kurpius SER, & Lucart AL (2000). Military and civilian undergraduates: Attitudes toward women, masculinity, and authoritarianism. Sex Roles, 43(3), 255–265. 10.1023/A:1007085015637
- Rubin M, Paolini S, Subaši E, & Giacomini A (2019). A confirmatory study of the relations between workplace sexism, sense of belonging, mental health, and job satisfaction among women in male-dominated industries. Journal of Applied Social Psychology, 49(5), 267–282. 10.1111/jasp.12577
- Salgado DM, Knowlton AL, & Johnson BL (2019). Men's health-risk and protective behaviors: The effects of masculinity and masculine norms. Psychology of Men & Masculinities, 20(2), 266.
- Sasson-Levy O (2003). Feminism and military gender practices: Israeli women soldiers in "masculine" roles. Sociological Inquiry, 73(3), 440–465. 10.1111/1475-682X.00064

Smith BN, Vaughn RA, Vogt D, King DW, King LA, & Shipherd JC (2013). Main and interactive effects of social support in predicting mental health symptoms in men and women following military stressor exposure. Anxiety, Stress & Coping, 26(1), 52–69. 10.1080/10615806.2011.634001 [PubMed: 22098413]

- Stanley B, Gameroff MJ, Michalsen V, & Mann JJ (2001). Are suicide attempters who self-mutilate a unique population? American Journal of Psychiatry, 158(3), 427–432. 10.1176/appi.ajp.158.3.427 [PubMed: 11229984]
- Tsirigotis K, Gruszczynski W, & Tsirigotis M (2011). Gender differentiation in methods of suicide attempts. Medical Science Monitor: International Medical Journal of Experimental and Clinical Research, 17(8), PH65–PH70. 10.12659/MSM.881887 [PubMed: 21804473]
- Turner BJ, Layden BK, Butler SM, & Chapman AL (2013). How often, or how many ways: Clarifying the relationship between non-suicidal self-injury and suicidality. Archives of Suicide Research, 17(4), 397–415. 10.1080/1381m8.2013.802660 [PubMed: 24224673]
- Van Gilder BJ (2019). Femininity as perceived threat to military effectiveness: How military service members reinforce hegemonic masculinity in talk. Western Journal of Communication, 83(2), 151–171. 10.1080/10570314.2018.1502892
- Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite SR, Selby EA, & Joiner TE Jr (2010). The interpersonal theory of suicide. Psychological Review, 117(2), 575–600. 10.1037/a0018697 [PubMed: 20438238]
- Whitlock J, Muehlenkamp J, Purington A, Eckenrode J, Barreira P, Baral Abrams G, Marchell T, Kress V, Girard K, Chin C, & Knox K (2011). Nonsuicidal self-injury in a college population: General trends and sex differences. Journal of American College Health, 59(8), 691–698. 10.1080/07448481.2010.529626 [PubMed: 21950249]

## **Public Significance Statement:**

This study found that a strong belief in the traditional masculine gender role norms of emotional control and violence, particularly among women Veterans, is associated with use of non-suicidal self-injurious (NSSI) behaviors. Addressing adherence to these masculine norms in psychotherapy with both male and female Veterans may help to prevent engagement in NSSI behaviors and suicide attempts for Veterans.

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Table 1

Summary of Regression Models of Association of CMNI and Covariates with DSHI Total, NSSI Disorder Diagnosis, and Wall Object Punching

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Variable	DSHI Total	Trimmed DSHI Total	NSSI Disorder Diagnosis	Trimmed NSSI Disorder Diagnosis	Wall-Object Punching	Trimmed Wall Object Punching	Final Wall Object Punching
Winning	0.05 (-0.09, 0.18)		0.02 (-0.25, 0.28)		-0.004 (-0.21, 0.20)		
Emotional Control	$0.22^{**}(0.06, 0.38)$	$0.23^{**}(0.09, 0.38)$	0.08 (-0.76, 0.92)		$0.25 \stackrel{*}{(0.04, 0.47)}$	$0.30^{**}(0.11, 0.48)$	$0.30 \stackrel{**}{(0.12, 0.48)}$
Risk Taking	0.18 (-0.05, 0.41)		0.10 (-0.96, 1.15)		0.15 (-010, 0.41)		
Violence	-0.04 (-0.21, 0.13)		0.28 * (0.04, 0.57)	0.22 * (0.03, 0.40)	0.13 (-0.14, 0.40)		
Dominance	$-0.12 \ (-0.25, 0.01)$		-0.11 (-0.52, 0.19)		-0.16 (42, .09)		
Playboy	-0.10 (-0.27, 0.07)		-0.10 (-1.17, 0.97)		-0.08 (-0.33, 0.18)		
Self-Reliance	$-0.01 \; (-0.16, 0.15)$		-0.10 (-1.20,0.99)		0.03 (-0.24, 0.29)		
Primacy of Work	0.05 (-0.13, 0.24)		0.04 (-0.41, 0.49)		0.17 (-0.07, 0.40)		
Power over Women	0.04 (-0.12, 0.19)		-0.13 (-1.50, 1.24)		-0.04 (-0.26, 0.18)		
Disdain for Homosexuals	0.13 (-0.03, 0.29)		0.23 (-2.18, 2.65)		0.15 (-0.08, 0.37)		
Pursuit of Status	0.06 (-0.11, 0.22)		0.02 (-0.26, 0.30)		0.07 (-0.15, 0.28)		
Male Sex	0.02 (-0.20, 0.24)		-0.03 (-0.40, 0.34)		0.22 (-0.10, 0.54)		
Age	-0.15 (-0.32, 0.02)		-0.09 (-0.99, 0.82)		$24^{\ *}(-0.46, -0.03)$	-0.17 (-0.37, 0.03)	
White Race	0.17 (-0.45, 0.80)		0.04 (-1.98, 1.93)		0.36 (-0.35, 1.07)		
Black Race	0.16 (-0.49,0.81)		0.19 (-1.54, 2.88)		0.61 (-0.10, 1.31)		
Hispanic Ethnicity	0.01 (-0.20, 0.22)		0.47 (-19.20, 20.15)		0.13 (-0.10, 0.35)		
Sexual Minority	0.21 (-0.06, 0.47)		0.17 (-1.60, 1.94)		0.04 (-0.23, 0.31)		
Number of Psychiatric Disorders	0.31 *** (0.13, 0.49)	$0.39 \stackrel{***}{}^{***}(0.23, 0.54)$	$0.51^{***}(0.24, 0.75)$	0.63 **** (0.45, 0.77)	$0.36^{**}(0.17, 0.56)$	$0.38^{**}(0.17, 0.58)$	$0.39 \stackrel{**}{(0.19)}$
$\mathbb{R}^2$	0.31	0.20	0.67	0.44	0.47	0.28	0.25

Note. All values are standardized beta coefficients (i.e.,  $\theta$ ) with 95% confidence intervals.

p < 0.01, p < 0.01, p < 0.001

\* p<0.05,

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Table 2.

Correlations between Adherence to Traditional Masculine Norms by Gender and Sexual Minority Status.

	Sexual Majority Males (n=83)	Sexual Minority Males (n=6)	Sexual Majority Females (n=13)	Sexual Minority Females (n=14)	Sexual Majority Males (n=83)	Sexual Minority Males (n=6)	Sexual Majority Females (n=13)	Sexual Minority Females (n=14)	Sexual Majority Males (n=83)	Sexual Minority Males (n=6)	Sexual Majority Females (n=13)	Sexual Minority Females (n=14)
	Tot	al Number of	Total Number of NSSI Categories	ies		Lifetime NSSI Disorder	SI Disorder			Wall-Object Punching	t Punching	
Total Score	80.0	-0.02	0.39	0.42	-0.02	90:0-	0.51	69.0	0.12	-0.06	0.32	0.46
Winning	0.02	0.25	0.01	0.25	-0.03	00:00	0.12	-0.08	90:0	0.00	-0.03	0.05
Playboy	-0.07	-0.28	0:30	0.21	-0.08	60:0	0.24	0.14	-0.03	60.0	-0.12	0.19
Power over Women	0.02	-0.94	0.14	0.45	-0.15	-0.86	0.23	0.45	-0.05	-0.86	-0.23	0.58
Pursuit of Status	-0.11	-0.58	0.49	-0.04	-0.16	-0.32	0.49	-0.08	-0.08	-0.32	0.25	0.27
Risk Taking	0.14	0.20	0.29	0.39	0.00	0.13	0.35	0.49	0.05	0.13	0.18	0.29
Violence	0.01	-0.28	90:0	-0.01	0.13	-0.46	0.39	0.64	0.13	-0.46	0.14	0.07
Emotional Control	0.12	0.26	0.37	19.0	0.06	-0.10	0.11	0.44	0.11	-0.10	0.75	0.49
Self Reliance	0.07	0.10	0.01	0.26	0.01	0.25	0.22	0.17	0.05	0.25	0.31	0.26
Dominance	-0.11	-0.22	90.0	-0.44	-0.13	00:0	-0.02	0.13	-0.05	00.00	-0.34	-0.19
Disdain for Homosexuals	0.25	-0.18	-0.32	0.01	0.15	0.10	-0.12	0.43	0.18	0.10	-0.33	60:0
Work Primacy	0.01	69:0	0.13	-0.25	0.08	0.35	-0.13	-0.36	0.12	0.35	0.20	-0.36

Note: Correlations in bold are significant at the 0.05 level (2-tailed).

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